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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,054	10/21/2004	Antti Tarkiainen	66411-092	8413

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EXAMINER

LE, JOHN H

ART UNIT PAPER NUMBER

2863

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/512,054	TARKIAINEN, ANTTI	
	<b>Examiner</b>	<b>Art Unit</b>	
	John H. Le	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/21/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Abstract*

1. The abstract of the disclosure is objected to because "(Figure 1) in the abstract should be avoided. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 101*

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be tangible result claimed.

Regarding claims 1-12, merely determining on the basis of the properties of an ellipse formed by a space vector of the space vector quantity in the electrical network the magnitude of the negative sequence component of the space vector quantity in the electrical network and the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component would not appear to be sufficient to constitute a tangible result, since the outcome of the determining on the basis of

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the properties of an ellipse step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. Therefore, claim(s) 1-12 appear(s) non-statutory.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 7 are rejected under 35 U.S.C. 103(a) as obvious over Huggett et al. (USP 6,201,715).

Regarding claim 1, Huggett et al. teach a method for determining properties of a negative sequence component of a space vector quantity (voltage) in an electrical network (e.g. Figs.1-2, Col.2, lines 9-30), wherein the method comprises the steps of determining on the basis of the properties of an ellipse formed by a space vector of the space vector quantity (voltage) in the electrical network the magnitude of the negative sequence component of the space vector quantity in the electrical network (e.g. Col.2, lines 20-30, Col.3, lines 14-25, lines 44-50) Col.4, lines 27-33).

Although Huggett et al. is silent on the teaching of the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component, however it would have

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been obvious to one of ordinary skill at the time the invention was made to teach the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component since the first park vector PV1 corresponds to positive sequence component and second park vector PV2 corresponds to negative sequence component of the space vector (voltage) are lined up in the same direction and a major axis of the ellipse is formed (e.g. Col.2, lines 20-30).

Regarding claim 2, Huggett et al. teach determining the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component (as discussed above), comprises determining the angle of the minor semi-axis of the ellipse formed by the space vector of the space vector quantity (voltage) in the electrical network (e.g. Col.3, line 41-Col.4, line 26).

Regarding claim 7, Huggett et al. teach said space vector quantity in the electrical network being voltage (e.g. Col.2, lines 1-8, Col.2, lines 20-30, 46-53).

#### ***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H. Le whose telephone number is 571 272 2275. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571 272 2269. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

October 17, 2006



John Barlow  
Supervisory Patent Examiner  
Technology Center 2800